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Peter Ressler
Chemical Processors, Inc.
2203 Airport Way South, Suite 400
Seattle, WA 98134

Re: Chemical Processors Inc. Georgetown Facility
Comments on draft RFI Report

Dear Mr. Ressler:

We have completed our review of your Phase II Hydrogeologic Investigation Report submitted on December 15, 1989. EPA comments are enclosed.

Pursuant to the 3008(h) order signed September 30, 1988, your revised RFI Report must be submitted within 30 days of receipt of these comments.

Please call Sylvia Burges at 206-442-1254 if you have any questions.

Sincerely,

David Tetta, Chief
RCRA Compliance Section

Enclosure

cc: Jack Boller, WOO
Tom Eaton, Washington Department of Ecology

USEPA RCRA



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PART I
GENERAL COMMENTS

Listed below are a few general comments concerning the requirements of the RFI Work Plan and Agreed Order, as well as information provided in the RFI investigation report.

- The RFI investigation did not include a detailed Historical Site Evaluation as required in the Work Plan. In addition, a detailed Site Description would be very helpful in evaluating the potential for offsite contamination of property adjacent to the Chempro Georgetown facility. Site background and description are necessary to understand potential source areas and transport paths for site contamination. Also, a section on environmental setting would aid the report.
- It appears that some of the sub-tasks in the Agreed Order were eliminated from this investigation, although this is not documented in the RFI report. If the surface water, sediment, and air quality investigations were deleted or postponed, this should be noted in the report.
- Task V of the Agreed Order (Investigation Analysis) was not provided in the RFI report, although some limited evaluation of geochemical data was discussed in the report and in summary tables of analytical results. Page 43 of the Agreed Order provides a Schedule for Completion of an RFI and CMS for the Chempro Georgetown Facility. The schedule states that Task IV and V are completed 30 days after completion of work in Task III Work Plan.
- In general the RFI report is somewhat difficult to read; examples include references to data in tables that do not exist, and cumbersome, confusing labeling of boring and well locations (detail provided in technical review).
- The geostatistical package used for kriging (Surfer Software) is an adequate software package, but does not fully utilize the variogram model used in kriging. A more powerful geostatistical software package may realize more accurate and/or different results.
- The RFI report needs an acronym list.
- Common reference is made to "historical practices" creating contamination, without aptly describing or defining what is meant by this term. Again, without a site history, it is difficult to place past disposal practices in context.
- The document is very difficult to follow and to search for particular pages due to the abundance of long tables without page numbers. These tables should be paginated along the bottom (8½-inch) margin.

- In general, a lot of data and some summary information is provided, but interpretation and application is very scant. There is a virtual lack of discussion regarding contaminant sources, specific transport paths and mechanisms, and possible plume discrimination or extent. Offsite contamination is not mentioned.
- The overall impression is that the report lacks depth, detail, and interpretation. Very little applicable information has been extracted from a huge amount of excellent data. The report also has not been carefully edited, either technically or structurally.
- The analytical results from the RFI do support a requirement that Chempro conduct a CMS.

PART II & III
TECHNICAL REVIEW

The following section of this report includes a technical review of Chempro's RFI report for the facility and evaluation for technical adequacy and compliance with the Order and Work Plan (Task 3 of SAIC's Work Assignment Number R10025). The comment headings include the Section of the report, the page number, the paragraph number (by whole page), and/or line number referenced. The Work Plan comments are noted as bulleted items in Part II of the document. Part III includes comments evaluating the requirements of the Agreed Order.

PART II
TECHNICAL COMMENTS

Section 2.2 p. 2-1

No later mention of May 1989 water levels is made in text in Sections 2.13 or 3.5.3.

Section 2.3 p. 2-1

State how background water quality information was used to define which borings became wells. It is unclear as to how this can be done. Were borings left open for later analyses?

Figure 2-1 p. 2-2

It is unclear from this map whether monitoring wells HC-1, HC-2, HC-3, HC-7, HC-9, and HC-10 (solid circles but HC labels) are abandoned or extant. Abandoned well G-9 is not labeled.

Section 2.4.1 p. 2-3 2nd paragraph lines 8-9

Was the pump placed between the Teflon tubing and the Tedlar air bag? If so, state this and also provide the composition of the pump surfaces contacting the sample.

Section 2.5.1 p. 2-4 & 2-6

Section 2.5.1 is confusing for the reader to follow in any detail. There is a very unclear relationship between "T-borings" and "soil borings." It is unclear which of these soil borings correspond exactly to the T-borings or if they were drilled near the T-borings. Do these soil borings correspond to the "CG" well locations in Figure 2-1? If not, where exactly are the borings located? Distinctly define (in text or summary table) the relationships between T-borings, soil borings, and monitoring well locations.

Section 2.5.1 Table 2-2 p. 2-8 & 2-9

For TB-5, the surface elevations of the two shallow borings are incorrect. The first shallow boring should be 10.19; the second should be 10.06 (see Appendix G and Table 3-3). For TB-13, the second shallow well has an incorrect surface elevation of 30.5 instead of 7.53.

Section 2.5.2 p. 2-10 1st paragraph

The use of the designation "CG-" is introduced without explanation. If the monitoring well designation is used here, it should be used earlier (Section 2.5.1 and Table 2-2) to reduce the confusion of soil boring identification.

Section 2.5.2 p. 2-10 2nd paragraph

The first sentence states "soil samples ... collected from each deep boring at depths of approximately 50, 85, and 105 feet bgs (Table 2-4)." Table 2-4 has the deepest boring at 33 feet bgs. In addition, Table 2-2 has well TB-1 109.5 feet bgs and well TB-5 at 123 feet bgs. Comparing these tables as reference from text is confusing. Which table is correct? Headings in Table 2-4 include "Approximate Sample Depth (ft bgs)"; why is it an approximate sample depth?

Section 2.5.2 p. 2-15 2nd paragraph line 6

From all previous indications, TB-9 is a shallow boring, not intermediate.

Section 2.5.2 p. 2-15 2nd & 3rd paragraphs

First sentence implies that composite samples were collected to 10 feet bgs at 5-foot intervals. However, the second sentence in the third paragraph states samples collected at discrete depths of approximately 2 feet, 5 feet, 7.5 feet, 10 feet, and 20 feet, and termination depth if greater than 29 feet. Distinguish between these two statements.

When collecting soil samples from a split spoon sampler, a range of depth is collected to ensure adequate sample material for analysis (e.g. 6-inch sample from 2 feet to 2.5 feet). Were the depths sampled a grab sample including 2 inches above and below 2 feet, or was the 2-foot mark the top or bottom of the sample collected? Sample interval used in the study is not well defined.

Section 2.5.2 p. 2-17 Table 2-5

This table does not include several compounds that were actually analyzed by the laboratory and included in Tables 3-6, 3-7, and 3-9. Table 2-5 needs to be updated to reflect the complete list of actual analytes.

- Table D-1 on page D-10 of the Phase II Hydrogeological Investigation Proposal for Monitoring, Analyses, and Testing; Volume I includes 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, PCB-1221, and PCB-1254 as Sampling Parameters for this investigation. Why are they not listed in Table 2-5?

PCBs are not very mobile in soil, yet PCBs were analyzed in ground water samples and not soil samples. What is the reasoning for not analyzing PCBs in the soil samples? Provide reasons for this in the text.

Section 2.5.4 p. 2-16 4th paragraph

The chronologic relationship of drive points installation, augering, and driving split spoons is unclear.

Section 2.5.4 Table 2-7 p. 2-21

This table does not include several compounds that were actually analyzed by the laboratory and included in Tables 3-10, 3-11, and 3-15. Table 2-7 needs to be updated to reflect the complete list of actual analytes. Furthermore, the last 12 compounds listed under EPA Method 624 are out of place.

Section 2.8.2 Table 2-8 p. 2-25

There are two sets of transcription errors in this table as compared to Table 3-3, Table 2-2, Appendix A, and Appendix G. (1) For TB-3, the elevations (TOC) (7.91 & 7.86 ft) are transposed between CG-6-S-1 and CG-6-S-2. (2) For TB-5, the well data for CG-5-S-1 (TB-5A) and CG-5-S-2 (TB-5B) are probably transposed. Appendix G and Table 3-3 list the elevation (TOC) differently than in Table 2-2, Table 2-8, and Appendix A.

At location TB-11, the second well "CG-10-S-1" should be stated listed as "CG-10-S-2." This listing of 24 wells (plus the listing of wells in Table 2-9 and borings in Table 2-2) does not include two deep wells shown on Figure 2-1 (CG-1-D at TB-13, and CG-2-D at TB-7). It should be stated somewhere that these two deep wells are old (Phase I) wells CG-1 and CG-2. Table 2-8 either needs to be labeled as "New Monitoring Well Details" or it needs to have completion data for all SE/E wells at the facility.

Section 2.5.4 p. 2-19 1st paragraph and p. 2-29 1st paragraph

Stabilization of temperature and pH to within ± 10 percent is meaningless. Relative temperature (percent) changes can only be applied to a Kelvin temperature scale; 10 percent of 15°C (288 K) is $\pm 30^{\circ}\text{C}$. The pH scale is logarithmic, and a relative (percent) change should be applied to a linear scale (in this case, the negative log of pH values).

Section 2.8.2. p. 2-24

It should be stated where the screens were exactly placed with respect to static water levels or confining beds. For example, in the shallow aquifer, were the shallow wells placed with the top of the screens above or below the water table at the time of installation?

Section 2.9 p. 2-27 and Section 2.12 p. 2-31

A summary table for ground water sampling from monitoring wells should be included as it was for soil samples (Table 2-4). This should include the sample location, number, date of collection, and if any QA samples were taken with environmental samples (duplicates, field blanks, etc.).

Section 2.11 p. 2-31 2nd paragraph line 1

Concentrated HCl already has a pH < 2 before dilution. This statement says nothing about amount of dilution. Was it actually diluted until the pH was > 2 ?

Section 2.11 p. 2-31 2nd paragraph line 5

Considering that the final water rinse was dispensed through the hand pump, the internal composition should be stated. Were any field blanks (equipment rinses) taken through the pump?

Section 2.14 p. 2-33 & 2-34 (Aquifer Testing)

- p. A-8 Work Plan paragraph number 16

Work Plan states that 24- and 48-hour recovery tests will be performed in existing interim corrective measure's recovery well system. No long-term pump tests were performed during the RFI. Provide discussion of when these tests will be performed.

Section 2.15 p. 2-35 (Well Abandonment)

- p. A-8 Work Plan paragraph number 14

Work Plan states that all G-series wells and HC-4, HC-5, HC-6, and HC-8 will be closed. Wells G-5 and G-6 were not abandoned because they could not be located at the time of the investigation. Provide discussion of when these wells will be formally abandoned.

Section 3.1 p. 3-1 (Beneficial Use Survey)

- p. A-4 & A-5 Work Plan paragraph number 2

Discussion of historical site records and photographs to correlate facility conditions and past operational practices were not provided in the RFI report. Provide this information in the text.

Section 3.2 p. 3-1

The ambient air (background) concentrations are stated as being up to 55 ppm (total VOCs) from samples taken on July 7, 1989. It is unclear what is meant by "total VOCs" considering that one background sample (BG-SG-16) contained 620 ppm of 1,2-DCA alone. It appears that this statement needs correction. Also, was this "background" air used to purge the sampling pump as described on p. 2-3 (Section 2.4.1)? If so, it raises QA questions about the representativeness of environmental data and should be discussed in the text in more detail.

Section 3.2 Table 3-1 p. 3-2

Benzene values were left off this page of the table.

Section 3.4 bottom of p. 3-6

State that the geologic units are listed stratigraphically with the youngest unit at the top to the oldest at the bottom.

Section 3.4 p. 3-7 1st bullet

No mention is made of the sand-rich fill units that are shown in the geologic cross sections. The fill should be distinguished as a separate unit.

Section 3.5.3 p. 3-8

Change November 2 to November 3.

Section 3.5.3 Table 3-3 p. 3-11 & 3-12

The elevation for well G-9 is listed as 8.45 ft here and as 8.48 ft in Appendix G. Any elevation changes and corresponding water levels need to be corrected.

Section 3.5.4 p. 3-10

A discussion of hydraulic gradients should either be included with (immediately before or after) the discussion of ground water flow direction (Section 4.2.3) or a reference should be made to Section 4.2.3 or to Figures 4-5 through 4-8.

Section 3.6.1 Table 3-5 p. 3-15

If the listed concentrations are maximum measurements for the borehole, then state this in the table.

Section 3.6.3 p. 3-16

Define "TCH" in text. Lumping of all "non-chlorinated solvents (ketones and BTEX compounds)" is an unnatural categorization of compounds. Non-chlorinated volatile compounds listed in Table 3-6 include: (1) ketones, (2) aromatic hydrocarbons (BTEX), and (3) other non-chlorinated solvents (carbon disulfide, styrene). These three groups (plus chlorinated solvents) should be discussed separately in the text. The value given in the text of 3300 mg/kg for a ketone maximum is incorrect; this value in Table 3-6 is for toluene. The maximum ketone should be stated as 39 mg/kg.

Section 3.6.3 Table 3-6 p. 3-22 (footnotes of all analytical summary tables)

The second line of the footnotes states that "data were adjusted for blank detection where appropriate." Which blank is being referred to here? (Section 3.6.2 only discusses adjustment with respect to lab method blanks, which are mentioned two lines down in the footnotes.)

Section 3.6.3 p. 3-23 2nd paragraph

Four groups of BNAs are summarized in this paragraph. However, Table 3-7 lists four compounds that do not fit into these four groups and which would better be lumped as "other BNAs." This fifth group includes benzoic acid, dibenzofuran, isophorone, and n-nitrosodiphenylamine. This group should be discussed separately in the text.

Section 3.6.4 p. 3-23 1st paragraph

Non-chlorinated volatile compounds listed in Table 3-10 include: (1) ketones, (2) aromatic hydrocarbons (BTEX), and (3) other non-chlorinated solvents (vinyl acetate and styrene). These three groups (plus chlorinated solvents) should be discussed separately in the text.

State that the three depth intervals correspond to samples A, B, and C.

Section 3.6.4 p. 3-44 3rd paragraph

Four groups of BNAs are summarized in this paragraph. However, Table 3-11 lists four compounds that do not fit into these groups and which would best be lumped as "other BNAs." This fifth group includes the last four compounds in the table. This group should be discussed separately in the text.

Section 3.6.4 p. 3-49 Table 3-12

State in the title that these are dissolved metals.

Section 3.6.5 p. 3-48 4th paragraph

See comment for page 3-23, 1st paragraph regarding solvents.

Section 3.6.5 p. 3-57 3rd paragraph

See comment for page 3-44, 3rd paragraph regarding the last five compounds in Table 3-14.

Section 3.6.5 p. 3-63 2nd paragraph and Table 3-15 p. 3-64

Various forms of PCB (Aroclor) are not listed in Table 2-7. What laboratory methodology was used for these PCBs? In Table 3-15, indicate in the title that these are dissolved metals.

Section 3.6.6 p. 3-73 last paragraph

State how RPDs were handled when only one of the duplicates had detectable contaminants.

Section 3.6.8 p. 3-80 1st paragraph

Explain what is meant by the "increased sampling interval of the monitoring well" and how it affects the RPDs. State what other factors cause these RPDs to be high.

Section 3.6.9 p. 3-80 4th paragraph

Stating actual concentrations of contaminants is a more effective way to explain distribution of contaminants at the site. What concentrations are you comparing that are "within an order of magnitude?" What sample locations and depths are you comparing?

Section 3.6.9 p. 3-80 5th paragraph

Same comment for p. 3-80, 2nd paragraph also applies to the third sentence in this paragraph. The Harper-Owes method of sampling indicates poor sampling techniques. QA/QC standards in 1982 and 1983 were not as stringent as present standards. Comparing historic data with data collected in 1989 is not an effective method for interpreting present site contamination characteristics.

Sections 4.1.1 and 4.1.2 p. 4-1

These two sections on Site Topography and Regional Geology are not based on interpretations of field studies at Chempro and do not belong in Section 4. They are better placed in Section 1 or in a new section (between Sections 1 and 2) on Environmental Setting along with Site Description and Site Background.

Section 4.1.3 p. 4-2 1st paragraph

State that the stratigraphic units are listed youngest at top to oldest at bottom. In the first bullet for the upper Sand unit, it is suggested that the majority of the sand may be fill. However, the geologic cross sections only show a thin uppermost unit of sand-rich fill. Because the upper sand unit extends to 30 feet below sea level, it is unlikely to be mostly fill. Also, the uppermost fill unit should be separated out as a fifth distinct unit on page 4-2.

Section 4.1.3 Figure 4-1 p. 4-3

Same comments as for Figure 4-1, page 2-2. Also, A & A' are reversed on Figure 4-1.

Section 4.1.3 Figures 4-2, 4-3, & 4-4

The thin lenses of material in the upper half of these cross sections should be labeled, including the large one on the left side of Figure 4-4. In Figures 4-3 and 4-4, state that several wells near the intersection of B-B' and C-C' are projected into these two sections. In Figure 4-3, list the total depth (TD) for all wells, as was done in Figure 4-4.

Section 4.2.2 p. 4-8 5th paragraph

Geologic facies changes are not described for the deep unit in Section 3.4, as is stated in Section 4.2.2. In the last sentence, "due to the depositioned environment" does not explain the premise of the sentence.

Section 4.2.3 p. 4-9 2nd paragraph

The kriging algorithm of Golden Software, Inc., is a good first approximation of line-fitting. However, it often produces irregular or spurious results for contour lines, which need to be inspected and modified to produce realistic results. Some specific examples follow.

Section 4.2.3 Figure 4-5 p. 4-10

The contour lines for 1.1 and 1.4 feet need to be labeled. The 1.1-foot contour line is irregularly shaped (curved) for no apparent reason; it should trend roughly parallel to the 1.2-foot contour line and pass through well CG-6-S-1 (1.10 feet). The 1.4-foot contour line should trend closer to CG-6-S-1 (1.36 feet) and much closer to CG-10-S-1 (1.35 feet). The net result of these changes is to increase the gradient and the horizontal flow velocity.

Section 4.2.3 Figure 4-6 p. 4-11

The 1.1-foot contour lines should trend very close to well CG-2-S-2, with a water level of 1.11 feet. If well CG-3 (1.44 feet) is to be considered, then the 1.4-foot contour line should trend closer to this well.

Section 4.2.3 Figure 4-8 p. 4-13

Well CG-4-D should be labeled. The 1.0-foot contour line should trend close to CG-4-D (1.11 feet).

Section 4.2.3 p. 4-23 1st paragraph lines 5 & 6

It is stated that chlorinated benzenes do not tend to volatilize, but Table 4-4 indicates that they have a high volatility. One of these references should be corrected.

Section 4.3 (Geochemistry)

■ p. A-1 Work Plan 2nd bullet

The sources and extent of contamination in soil/fill and ground water was not fully documented. Potential offsite contamination was not discussed.

■ p. A-8 Work Plan paragraph number 18 3rd & 4th bullet

Report must include interpretation of subsurface soil, ground water, and gas chemistry. A detailed interpretation (sources, transport paths and timing, zonation, plumes, offsite migration, etc.) was not provided for chemistry of subsurface soil and ground water. The report stated only locations and concentrations of elevated concentrations of contaminants.

The RFI report must evaluate the need for acquisition of additional onsite/offsite data. Additional data needs were not discussed in the RFI report. Provide a discussion on the potential need for further onsite or offsite soil gas, subsurface soil, or ground water investigations.

Section 4.3.3 p. 4-25 1st paragraph after bullets

State in detail in the text the "sources of organic compounds and the ground surface boundary"

Provide in the text the date(s) when the site was paved with asphalt and concrete, including the extent of the paving. Does it include every square foot of the site or are there unpaved areas?

Section 4.3.3 Figures 4-9 & 4-10 p. 4-26 & 4-27

Label all contour lines. State on the figure that these are total aromatics (BTEX) and total chlorinated hydrocarbons (this comment applies to all chemical contour plots).

Section 4.3.3 p. 4-28 2nd paragraph

Making an assumption includes providing the alternative explanations. Provide other explanations in the text that lead to this assumption.

Section 4.3.4 p. 4-28 3rd paragraph and 4-29 1st paragraph

Stating that historic practices contributed to present contamination is not substantiated because of inaccuracy of historic data and lack of detailed explanation for distribution of contaminants. The vertical profiles in Appendix I show probable dilution by fluctuation of water table. However, they do not definitively explain whether source of contamination is historic. The same mechanism could also explain recent contamination. For example, a recent spill of TCE at the surface would show high concentrations of TCE above the water table, and dilution at the zone of the capillary fringe. In fact, if contamination was historic, one may expect TCE to move through the fill leaving only trace concentrations of TCE in the fill material.

There is no detailed discussion of possible contaminant transport mechanisms at the site including; detailed discussion of source(s) of contamination, contaminant transport, geochemical interactions, adsorption and desorption mechanisms, volatilization and diffusion of contaminants in the vadose zone, and biochemical considerations. At a minimum, provide a detailed discussion of these topics in the text.

This is the first time underground storage tanks (UST) were mentioned in the report. Provide the UST locations in the text and document any known or suspected leaks. Provide the date(s) they removed from the site.

Section 4.3.4 p. 4-29 3rd paragraph

The sentence before the paragraph states "The remainder of this section will discuss specifics related to classes of contaminants." What does the word "specifics" mean? Provide a discussion of the topics covered in this section.

A detailed discussion would help clarify analysis of the data. Stating that "Generally the same compounds exist above and below the water table" does not explain subsurface soil conditions. This lack of detailed discussion is also evident in the Non-Chlorinated Solvents, Phenols, PAHs and Metals headings in this section of the report. Provide a detailed discussion, using tables and figures, on contaminant distributions in subsurface soil in the text.

Section 4.3.5 Figure 4-12 p. 4-35

All contour lines need to be properly labeled. The "Note" and the reason for the separation is unclear.

Section 4.3.5 p. 4-37 end of 1st paragraph

State the evidence for trace contamination "drag down" during drilling.

Section 4.3.5 Figure 4-14 p. 4-38

Because only two distinct wells have significant contamination concentrations, and because the spacing of isopleths about them is unknown, this figure should be modified. Either the values at all four wells should be printed next to the wells (including ND values) and the isopleths removed, or the figure should be abandoned.

Section 4.3.5 Figure 4-18 p. 4-43

Same comment as for Figure 4-14, p. 4-38.

Section 4.3.5 Figure 4-21 p. 4-47

Same comment as for Figure 4-14, p. 4-38.

Section 5 p. 5-4 2nd paragraph

The first sentence of this paragraph states "The distribution of soil contamination above the water table is primarily a function of historic practices." This statement is not substantiated with thorough analysis of geochemical data provided in the report. It is one method of explaining site subsurface conditions, but other possibilities should be discussed. Provide a detailed discussion in the text of other alternative explanations for soil contamination above the water table at the Chempro site.

Section 5 p. 5-6 1st paragraph

Comparing EP-Tox data from 1981 soil sampling investigation with data collected for this investigation is not an accurate comparison. QA/QC standards and sampling techniques were not as stringent as present standards. Explain in the text reasons why comparing this data is a valid assumption. Include the QA/QC standards used in 1981.

Section 5 p. 5-8 last sentence

This statement is not substantiated with thorough analysis of geochemical data provided in the report. It is one method of explaining site subsurface conditions. Discuss other alternative explanations in the text.

PART III
REVIEW OF AGREED ORDER

This section of the report is an evaluation of Attachment B - Scope of Work Outline for Conduct of RFI and CMS provided in the Agreed Order EPA Docket No. 1088-09-17-3008(h). Requirements included in Task IV and Task V of the Agreed Order are compared to the Chempro RFI investigation report.

Task IV: Facility Investigation

1. Environmental Setting - Agreed Order p. 34

A discussion of soils and earthen materials characterization including mineral and organic content was not provided in the text. Sorptive and cation exchange properties were not included in the discussion in the report. Surface water drainage patterns in the vicinity of the facility were not discussed in the report.

An evaluation of the potential for air releases and predicted effects based on topographic and manmade features and climatological data were not included in the report

2. Source Characterization - Agreed Order p. 34 & p. 35

None of the requirements listed in this section were evaluated in the report, except for some of the physical descriptions of the types of contaminants found at the site.

3. Contamination Characterization - Agreed Order p. 35

Data was collected for ground water, soils, and subsurface gas concentrations in the vicinity of the facility. Surface water and ambient air concentrations were not collected. Order states that "previous data collection shall be factored into the design and location of monitoring locations." This statement implies that historic data should not be used for comparison with recent data collected at the facility.

3a. Ground water Contamination - Agreed Order p. 35

A detailed evaluation of a potential ground water contaminant plume(s) was not provided in the report. Plume presence or migration were not discussed, although numerous contaminants were identified in ground water. This may have resulted, in part, from the lack of offsite information and the complexity of onsite contamination.

3b. Soil Contamination - Agreed Order p. 35

Discussion of soil contamination did not include absorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, or oxidation that may affect contaminant migration and transformation. Velocity and direction of contaminant movement in soil and extrapolation of future contaminant movement were not discussed.

3c. Surface Water and Sediment Contamination - Agreed Order p. 35 & 36

A surface Water and sediment contamination was not included in the RFI report.

3d. Air Contamination - Agreed Order p. 36

An air contamination investigation was not included in the RFI report.

3e. Subsurface Gas Contamination - Agreed Order p. 36

This investigation fulfilled the requirements of the Agreed Order.

4. Potential Receptor Identification - Agreed Order p. 36 & 37

The requirements provided in this sub-task of the Agreed Order were not fulfilled in the RFI investigation.

Task V: Investigation Analysis

1. Data Analysis

The type and extent of contamination was provided in the RFI report. Migration pathways were not well documented and evaluation of data was limited.

2. Protection Standards

The requirements provided in this sub-task of the Agreed Order were not fulfilled in the RFI investigation.